savings and compliance programs at those who need them the most.

PHP7

THE EFFECTS OF NONCOMPLIANT COST-CUTTING BEHAVIORS ON OUTCOMES AMONG ADULTS IN THE UNITED STATES

Bolge SC, Kannan H
Consumer Health Sciences, Princeton, NJ, USA

OBJECTIVE: To quantify the effects of noncompliant cost-cutting behavior on health-related quality of life (HRQOL), work productivity, and activity impairment among U.S. adults. **METHODS:** Data were from quarters one and two of the 2007 National Health and Wellness Survey (NHWS), an internet-based study of the health care attitudes, behaviors, disease states, and outcomes of a demographically representative sample of adults age 18+. Noncompliant cost-cutting behaviors were defined as taking less medication than prescribed, cutting tablets in half, or buying fewer tablets. Outcomes measures include the SF12V2 and the Work Productivity and Activity Impairment (WPAI) questionnaire. Linear regression analysis was used to control for gender, age, race, marital status, education, and comorbid conditions. **RESULTS:** Of the 42,010 NHWS respondents, 7% took less medication than prescribed, 6% cut tablets in half, and 2% bought fewer tablets. Controlling for potential confounders, SF12 physical and mental summary scores are significantly lower for those taking less medication (2.3 and 2.5 points lower, $p < 0.001$), those cutting tablets in half (0.9 and 1.1 points, $p < 0.001$), and those buying fewer tablets (1.5 and 1.6, $p < 0.001$). Controlling for potential confounders, WPAI overall work loss and WPAI activity impairment are significantly lower for those taking less medication (10.3 and 7.2 points lower, $p < 0.001$), those cutting tablets in half (11.2 and 5.3 points, $p < 0.001$), and those buying fewer tablets (15.8 and 8.2, $p < 0.001$). **CONCLUSION:** Noncompliant cost-cutting behavior negatively affects humanistic outcomes. By decreasing this behavior cost savings and compliance programs should have a positive effect on humanistic outcomes.

PHP8

THE EFFECTS OF NONCOMPLIANT COST-CUTTING BEHAVIORS ON INDIRECT COSTS AMONG ADULTS IN THE UNITED STATES

Bolge SC, Kannan H
Consumer Health Sciences, Princeton, NJ, USA

OBJECTIVE: To quantify the effects of noncompliant cost-cutting behavior on health-related quality of life (HRQOL), work productivity, and activity impairment among adults in Europe. **METHODS:** Data were from the 2007 European National Health and Wellness Survey (NHWS), a self-administered, Internet-based study of the health care attitudes, behaviors, disease states, and outcomes of a demographically representative sample of adults age 18+ across five European countries: France, Germany, Italy, Spain, and the UK. Three noncompliant cost-cutting behaviors were analyzed: taking less medication than prescribed, cutting tablets in half, and buying fewer tablets. Outcomes measures included the SF12V2 and the Work Productivity and Activity Impairment (WPAI) questionnaire. Linear regression analysis was used to adjust for gender, age, country of residence, marital status, education, and physical and psychiatric comorbid conditions. **RESULTS:** Of the 53,524 NHWS respondents, 3.1% took less medication than prescribed, 2.1% cut tablets in half, and 1.6% bought fewer tablets. Unadjusted results showed a negative association between these behaviors and indirect costs. Adjusting for potential confounders, SF12 physical and mental summary scores were significantly lower for those taking less medication (2.2 and 2.4 points lower, $p < 0.001$), those cutting tablets in half (1.8 and 2.0 points lower, $p < 0.001$), and those buying fewer tablets (1.8 and 2.3 points lower, $p < 0.001$). Adjusting for potential confounders, WPAI overall work loss and WPAI activity impairment were significantly lower for those taking less medication (11.0 and 9.2 points lower, $p < 0.001$), those cutting tablets in half (13.4 and 6.3 points lower, $p < 0.001$), and those buying fewer tablets (10.1 and 7.7 points lower, $p < 0.001$). **CONCLUSION:** Noncompliant cost-cutting behavior negatively affects indirect costs, specifically HRQOL, work productivity, and activity impairment. By decreasing this behavior cost savings and compliance programs should have a positive effect on humanistic outcomes.

PHP9

UNITED STATES PHYSICIANS AND IN-OFFICE DRUG ADMINISTRATION: THE CONCEPT OF "INCIDENT-TO" SERVICES

Pierce CA[1], Baker JJ[2]
[1]The Resource Group, Richfield, OH, USA, [2]The Resource Group, Pickton, TX, USA

OBJECTIVE: The U.S. Centers for Medicare and Medicaid Services (CMS) generally pays for non-institutional-based services and supplies "incident to" a physician's professional service. This study explores the concept of incident-to, the regulations and guidance surrounding its use and presents practical considerations for physicians. **METHODS:** Incident-to guidance provided by CMS was collected, arranged in order of issuance, abstracted and analyzed. A compilation of relevant resources, a glossary and checklist tool were also created as part of the project. **RESULTS:** Federal regulations at 42 CFR 410.26(b) specify criteria for "incident to" services. Medicare Part B pays for services and supplies incident to the service of a physician, including drugs or biologicals that are not usually self-administered. The services and supplies must be furnished in a non-institutional setting to non-institutional patients and be of an integral, though incidental, part of the service of a physician in the course of diagnosis or treatment of an injury or illness. They are also provided without charge or included in the bill of a physician. Such services are typically performed by non-physician staff however require direct personal supervision by the physician. The U.S Office of the Inspector General (OIG) has announced incident-to services as an area of study in their 2008 Work Plan. **CONCLUSION:** The concept of incident-to services is commonly misunderstood and may therefore present a Medicare compliance risk for physicians. It is essential for physicians and their practice decision-makers to understand and apply the CMS regulations surrounding incident-to services in order to appropriately bill and be reimbursed by Medicare for the provision of Part B separately payable drugs in non-institutional settings.

HEALTH CARE USE & POLICY STUDIES— Consumer Role in Health Care

PHP10

CREATION OF A RISK RATING SYSTEM TO COMMUNICATE DRUG SAFETY INFORMATION TO CONSUMERS

Cascade EF[1], Stephenson H[2]
[1]Quintiles, Inc, Falls Church, VA, USA, [2]iGuard, Inc, Princeton, NJ, USA

OBJECTIVE: With the withdrawal of Zelnorm, recall of products such as Ranbaxy's generic gabapentin, and the increase in

FDA safety communications related to highly prescribed products including the thiazolidinediones and bisphosphonates in 2007, information on drug safety was present weekly, if not daily, in the newspaper and on television. To assist consumers in understanding their risk of developing serious side effects and put into context the relative risk of their various medications, we have developed a 5-color drug risk rating system. **METHODS:** The iGuard Risk Rating system is a patented process for summarizing serious adverse events contained in each medication's Prescribing Information. Specifically, we focus on: 1) the severity of the reaction (serious disability or death); 2) the likelihood of the reaction (e.g., >1 in 10,000); and 3) proportion of the population affected (e.g., 0–15%). We also adjust for lack of experience with a product on the market: <1,000,000 prescriptions or <2 years post-launch. Our iGuard Risk Ratings, from lowest to highest, are as follows: 1) Green: Low Risk–Suitable for widespread use; 2) Blue: General Risk–Use under normal care of a doctor; 3) Yellow: Guarded–Be on the lookout for safety events; 4) Orange: Elevated Risk–Create a personal risk reduction plan with your doctor; and 5) Red: High Risk–Requires careful consideration of risk versus benefit. **RESULTS:** To date, we have rated 106 medications. Risk Ratings associated with individual medications are available on the project website at www.iguard.org. A total of 80 of 106 medications (75%) were rated Level 2/Blue: General Risk. An additional 20% were rated Level 4/Orange: Elevated Risk. Ratings across molecules within a therapeutic class are very similar. **CONCLUSION:** Consumer feedback on the iGuard Risk Ratings has been very positive, especially in understanding which of their medications they need to be most diligent in monitoring.

PHP11

ETHNIC DISPARITIES IN HOSPITAL DISCHARGES AGAINST MEDICAL ADVICE AMONG CARDIOVASCULAR DISEASE PATIENTS: THE ROLE OF HOSPITAL QUALITY

Onukwugha E[1], Weir MR[2], Saunders E[3], Shaya FT[4]
[1]University of Maryland School of Pharmacy, Baltimore, Baltimore, MD, USA, [2]University of Maryland, Baltimore, MD, USA, [3]University of Maryland, Medical System, Baltimore, MD, USA, [4]University of Maryland School of Pharmacy, Baltimore, MD, USA

OBJECTIVE: Ethnic disparities in hospital discharges against medical advice (AMA) have been examined in previous studies. However, the institutional factors affecting health decision making have received much less attention. This study examines the evidence for a joint impact of ethnicity and hospital quality on the likelihood of a discharge AMA in patients with cardiovascular disease (CVD). **METHODS:** Adult patients hospitalized with a primary admissions diagnosis of CVD from 2000 to 2005 were identified in a state-wide confidential inpatient hospital discharge dataset. The dataset was augmented with information from several sources, including the Joint Commission on Accreditation of Healthcare Organizations (JCAHO). A high quality hospital was defined as a hospital whose performance exceeded the state average on each JCAHO hospital performance measure. A hierarchical generalized linear logistic model of a discharge against medical advice controlling for various individual and contextual factors was estimated using cross-sectional data. **RESULTS:** A total of 2593 of the 328,342 hospitalizations for CVD (0.8%) resulted in a discharge AMA. The patients self-identified as non-caucasian in thirty percent (N = 100,074) of the hospitalizations. Fifteen percent (N = 48,177) of the hospitalizations occurred in high quality hospitals. The adjusted odds of a discharge AMA in a low quality hospital were lower for non-Caucasians (OR = 0.74; p = 0.0005) compared to Caucasians while the adjusted odds of a discharge AMA in a high quality hospital were unchanged between Caucasians and non-Caucasians (OR = 0.95; p = 0.6). Among Caucasians, a discharge AMA was less likely (OR = 0.75; p = 0.01) at a high quality hospital compared to a low quality hospital while, among non-Caucasians, the odds of a discharge AMA were unchanged (OR = 0.96; p = 0.74) across hospital quality groups. **CONCLUSION:** The two unique and complementary findings here are that: 1) institutional quality mediates the relationship between ethnicity and hospital discharges AMA; and 2) the relationship between hospital quality and discharges AMA varies with ethnicity.

PHP12

ASSOCIATION BETWEEN DIRECT-TO-CONSUMER ADVERTISING (DTCA) AND DRUG UTILIZATION IN THE U.S. MEDICAID MARKET FOR SELECTED DRUG CLASSES

Sheridan J[1], Guo JJ[2], Kelton CM[2], Shelly D[3]
[1]Medpace Reference Laboratories, Cincinnati, OH, USA, [2]University of Cincinnati, Cincinnati, OH, USA, [3]Meridian Life Science, Inc, Cincinnati, OH, USA

OBJECTIVE: Spending on direct-to-consumer advertising (DTCA) has seen exponential growth since the late 1990s. The purpose of this research was to assess the association between DTCA spending and drug utilization and reimbursement in the U.S. Medicaid market. **METHODS:** National direct-to-consumer advertising expenditures were obtained from Advertising Age for selected brands in three drug classes: HMG Co-A reductase inhibiting agents (statins), anti-ulcer/GERD medications, and antidepressants. The drug utilization and reimbursement (sales) data were extracted from the national Medicaid pharmacy files provided by the Centers for Medicare & Medicaid Services. The annual advertising expenditures, drug utilization, and reimbursement were charted from 2000 to 2005. Correlation analysis was used to assess the association between both contemporaneous and lagged DTCA spending by pharmaceutical companies and drug utilization and reimbursement for each of the three therapeutic classes. **RESULTS:** A wide range of estimated Pearson correlation coefficients were derived, including some negative coefficients. The strongest positive correlations were found for the statins and antidepressants for the year 2003. Only antidepressants had a statistically significant correlation ($r = 0.58$, $p < 0.05$) between DTCA and reimbursement/utilization based on a pooled correlation analysis from 2000 to 2005. **CONCLUSION:** Utilization rates and reimbursement in the Medicaid market for the investigated medications were not consistently statistically impacted by DTCA. While there is evidence of a strong correlation for antidepressants, there is less compelling evidence for statins, and none for the anti-ulcer drugs. Although both utilization and expenditures in Medicaid were growing for all three classes, their growth was due to factors beyond DTCA.

HEALTH CARE USE & POLICY STUDIES— Drug or Devices & Health Policy

PHP13

CONTROLLED SUBSTANCE WASTE IN HOME HOSPICE SETTINGS

Maxwell T[1], Woods CJ[1], Steward K[1], Knowlton M[1], Liao D[2]
[1]excelleRx, Inc, Philadelphia, PA, USA, [2]Jefferson Medical College, Philadelphia, PA, USA

OBJECTIVE: To describe the amount and types of unused controlled substances (CS) at the time of death in home hospice and to describe methods used by hospice nurses to destroy CS after